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WELL DEVELOPMENTS

No. XII Board of Water Well Contractors November 1991

GROUTING PROCEDURES

A number of questions have been raised during the past year concerning proper grouting methods. Apparently, some people are confused as to when continuously fed bentonite can be used in drilling a well. This method is limited to cable tool and other driven methods in unconsolidated formations only, although in some instances this method has been used on wells that are completed in consolidated formations. This is not an approved use.

Specific methods for consolidated formations are addressed under Administrative Rules of Montana (ARM) 36.21.655. Related rules exist for grouting of unconsolidated formations with and without significant clay beds (ARM 36.21.656 and 36.21.657), for artesian well grouting (ARM 36.21.658), and for sealing of artificial gravel pack wells (ARM 36.21.659 and 36.21.660).

Some contractors place only 18 feet of grout at the top of wells completed in an aquifer, either within or overlain by a consolidated formation. ARM 36.21.655, however, requires that the casing extend at least 5 feet into sound, uncreviced rock. The casing's lower end must be sealed into the formation with cement grout, and the remainder of the drill hole must be filled with grout to the ground's surface. If you do not hit sound, uncreviced rock until 60 feet down, your casing must extend to 65 feet, and the entire annular space must be filled to the top of the ground. In this case, the hole would contain 65 feet of grout.

These rules were covered during training sessions in June 1991 sponsored by the Board of Water Well Contractors. The Board strongly recommends that you read and understand the rules for specific formation sealing. Also keep in mind that under the general sealing rule, ARM 36.21.654, which outlines only minimum requirements, and specific rules ARM 36.21.655 through 36.21.660, each formation may require more than 18 feet of grouting material.

FLOWING WELLS

This topic has been covered in past issues of Well Developments but continues to be a concern. Special sealing standards for artesian wells (ARM 36.21.658, page 29 of the June 1991 rule book) specifically address this problem.

As you read this rule, please note that although the rule does not specifically say what materials you will use to grout an artesian well, it does require sealing to prevent the movement of water outside of the casing. Which method to use has been left to the licensee's discretion. The grouting material that will be used, however, does need to meet standards outlined in ARM 36.21.634 (33). According to subsection (3) of ARM 36.21.658, the well is to be completed with "seals, packers, and neat cement grout that will eliminate leakage around the well casing."

When the well flows at the surface, the well must be equipped with a control valve that can completely stop the flow. The well is not properly grouted if the well flows up around or near the casing when the control valve is shut.

The licensee, according to ARM 36.21.658 (4), shall not remove his drilling rig from the site without approval from the Board of Water Well Contractors for temporary removal until the flow has been controlled and until any leakage has been stopped.

If you have any questions about this rule, please contact the Board office in Helena at (406) 444-6643.

LAND DESCRIPTIONS ON WELL LOG REPORTS

The lithology of the underground structures found in well log reports offers a wealth of information to geologists, contractors, and drillers in projecting the occurrence of water on certain land and at a certain depth. Information in a well log report, however, is not valid if the land description of the well location is wrong. The problem becomes more complex when an individual who is looking for information may not be able to find the well according to the land description under which it was logged. Also, the erroneous land description on the report could place the information in an area with much different actual lithology. Thus, information in the well log report would erroneously project an occurrence of water or lack of water based on the wrong information.

In response to the question concerning who is responsible for supplying the land description, Section 85-2-516, MCA, requires a water well contractor or driller to submit a completed well log report to the Department of Natural Resources and Conservation within 60 days after the well is completed. Because filing this report is the licensee's responsibility, and because the Department requires the land description as part of the completed report, the responsi-

bility falls on the licensee. Some contractors have guessed at the well location because obtaining a land description from the well owner was difficult. As stated previously, these problems result in producing a well log report of no value. A number of contractors are addressing this problem by requiring the proper land description as part of the drilling agreement with the well owner.

The Board of Water Well Contractors recognizes that not all contractors use drilling contracts or agreements, and also that problems occasionally arise in obtaining land descriptions. This recognition, however, does not provide a solution. The DNRC regional offices will return a well log report that doesn't include a proper land description. Filing reports late also serves as grounds for disciplinary action against a licensee.

Because no easy solution is seen for this problem and because information included in well log reports benefits so many people, the Board of Water well Contractors will discuss this issue at its December 1991 meeting in Helena. If you have any suggestions or ideas on how to address this concern or on methods that are working for you, please send a note to Diana Cutler at the Board office in Helena.

WELLS INTENDED TO USE 35 GALLONS PER MINUTE OR 10 ACRE-FEET

Effective July 1, 1991, all applicants for new beneficial uses of groundwater from a well or developed spring that exceeds 35 gallons per minute (gpm) or 10 acre-feet (af) of water per year are required to obtain a permit prior to development. Before July 1, 1991, the limitation was less than 100 gpm.

The new legislation requires groundwater permit applicants to pay a one-time fee of $1 for each acre-foot of water they request in addition to the current, graduated fee that ranges from $50 to $250, depending on the amount of water requested.

To receive a Certificate of Water Right, applicants for developments of 35 gpm or 10 af or less need to file a Notice of Completion (Form 602), along with a $20 filing fee, within 60 days after completion.

Ten dollars of the filing fee and the $1 administrative fee will be used for a new groundwater monitoring and assessment program administered by the Montana Bureau of Mines and Geology.

For more information on these legislative changes, contact your local DNRC water resources regional office, or call the Helena central office at 444-6610.

GROUNDWATER COURSES OFFERED

The Wright State University Center for Groundwater Management is again offering its popular Interactive Remote Instructional System (IRIS) Groundwater Hydrology Program with a new cycle of courses that begins January 6, 1992. Included are two 22-week courses that cover groundwater hydrology and groundwater management; these classes have been offered since 1985. December 16, 1991, is the early registration deadline.

The IRIS sequence now has been expanded to include four 11-week courses first offered in May 1989. Added to the schedule because of widespread endorsement of IRIS's course format, these courses include Regional Hydrogeology, Design and Construction of Monitoring Wells, Legal Framework for Groundwater Protection, and Modeling Groundwater Flow. The early registration deadline for these courses is February 18, 1992.

The Wright State University's Department of Geological Sciences offers graduate-level credit by examination for all IRIS courses. Also, both *VISA* and *MasterCard* credit cards may be used to pay for tuition. For more information on the IRIS program, contact the Center for Groundwater Management, Wright State University, Dayton, OH 45435, (513)873-3461 or 3648.

The IRIS format is geared toward working geologists. Each student is assigned a personal tutor who is available to critique lessons and exams not only by mail, but also through a WATS telephone line to discuss students' questions. One of the reasons for the IRIS program's success is easy access to tutors outside of normal working hours. Also, course materials for each of the six courses are routinely updated and supplemented by workbooks that reinforce the primary reading.

Initially developed in conjunction with the U.S. Soil Conservation Service and with support from the U.S. Environmental Protection Agency, the IRIS Program is conducted through the Wright State University Center for Groundwater Management. The nationally recognized program makes its unique approach to groundwater topics available not only to individuals currently working in groundwater positions, but also to those currently seeking those types of positions.

DRY HOLE WELL LOG REPORTS

The Board of Water well Contractors has noticed that licensees are not filing well log reports on dry holes. According to ARM 36.21.679 on pages 34 and 35 of the new rule book, a well log report must be filed on all dry holes. The rule also provides that dry or inadequate wells must either be constructed as though they were producing wells with proper sealing procedures followed or else properly abandoned.

The information included in the well log report benefits not only the Montana Bureau of Mines and Geology data base, but it also helps the licensees. Knowing the number of dry holes and their depth in a given area can be as helpful as knowing how many and the depth of producing wells.

OLD WELL LOG REPORT FORMS

Kim Overcast is the DNRC person in Helena who is in charge of well log report forms. Kim is requesting that water well contractors, drillers, and monitoring well constructors who are using the old forms ask for new forms and destroy or recycle the old ones. The reports appear to be the same except for Form 602 (reverse side of the first copy, which the well owner submits for his water right filing). This form reflects the legislative change from the permit exemption previously being required for 100 gpm to 35 gpm or 10 acre-feet, and it also shows a 1991 form date (see related article in this newsletter). The filing fee has been raised from $10 to $20.

BOZEMAN WATER RESOURCES REGIONAL OFFICE

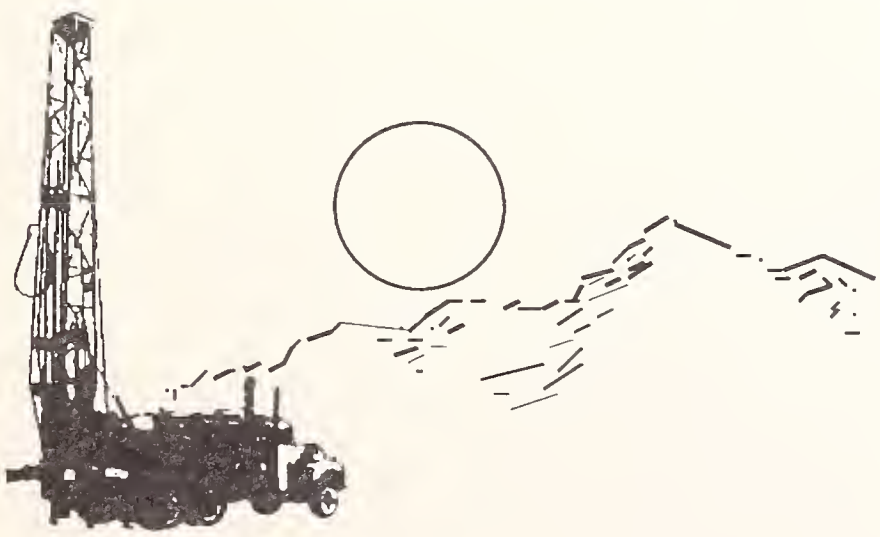
The Bozeman water resources regional office is one of nine located throughout Montana. As part of DNRC's Water Resources Division, the Bozeman office's work area covers Park, Gallatin, and Madison counties. The four full-time employees who work in the office focus on a variety of water resource areas, including water rights (new appropriations and adjudication), dam safety, water well drilling regulations, state water projects, and water management and planning.

Regional manager **SCOTT COMPTON** has been with DNRC since 1979, when he began as an engineer stationed in Miles City working with the water rights adjudication program in the Powder River basin. In 1980, Scott transferred to the newly opened Bozeman office and soon after assumed the manager position. Along with his administrative duties, he works to a certain extent with all of the programs under the Bozeman office's jurisdiction. Scott has a bachelor's degree in agricultural engineering from Montana State University.

Since 1978, **JAN MACK**, Water Resource Specialist III, has worked for DNRC's new appropriations program at three locations: Kalispell, Missoula, and currently Bozeman. Although Jan primarily is responsible for working with new water right filings, he also stays involved with the office's other programs. Jan has a bachelor's degree in environmental education from Michigan State University.

RUSTY TAYLOR, Water Resource Specialist III, is the Bozeman office's adjudication specialist and has been with DNRC in that program for 12 years. He transferred to Bozeman in 1980 from a one-person office in Dillon. As do the other staff, Rusty takes an active role in all of the office's programs so that he can assist as needed. During the past year, much of his work has involved assisting the Montana Water Court for special requests. Rusty has associate degrees from Spokane Community College in wildlife management and water resources.

Program assistant **SHARON SIMCIZEN** is the office's newest employee. Hired by the Bozeman office in May 1991, Sharon formerly worked for Montana State University's entomology department. Sharon's varied work background focuses on public assistance and computer experience. She assists with all programs, with an emphasis on public assistance for records research (water rights, well logs, etc.), processing groundwater filings, transfers of ownership, and clerical duties.



APPROVED TRAINING CLASSES

A dealer meeting sponsored by the 2M Company will be held January 14-15, 1992, at the Holiday Inn in Billings, Montana. The tentative program is outlined below.

Company	Presenter	Topic	Length of Presentation
WyoBen	Bob Stichman	Drilling mud, foam, and enviromat	3 to 4 hours
Red Jacket	Nile LaGrange & Allen Van Riper	Installation & trouble-shooting pumps Pumps - sales & environmental issues	1 to 3 hours
WellMate	Dick Becker	Sales, installation & trouble-shooting tanks	1 to 1 1/2 hours
Dale Carnegie	Dave Pals	Managing a small business	1 to 1 1/2 hours

For details, contact Chester C. Majors, Vice-President, 2M Company, Inc., 1215 Cordova, RR 9, Billings, MT 59101 (406-245-3008).

The Montana Water Well Drillers Association also will include training at its annual convention in Billings on February 5-7, 1992. Tentative topics scheduled for discussion include Health and Safety by Henry's Safety, Billings; Howard Smith Screens, computers; and Board of Water Well Contractors well construction standards. The conference will feature keynote speaker Ron Hiddleston, president of the National Groundwater Association and a water well contractor from Idaho. The final program will be available sometime during December. For more information, contact Vicki Lautt, Executive Secretary, 602 W. Second Street, Hardin, MT 59034 (406-665-3304).

NEW MONTANA WATER WELL CONTRACTORS LAW AND RULE BOOKS, DATED JUNE 1991, ARE AVAILABLE UPON REQUEST FROM THE BOARD OFFICE IN HELENA (444-6643).

LICENSE REVOCATION

The water well and monitoring well constructors licenses of Timothy Adair of the Plentywood/Poplar area were revoked in April 1991 after administrative contested-case proceedings were held in Helena. An independent hearing examiner declared that Mr. Adair was incompetent to construct water and monitoring wells. Mr. Adair's licensing bond also was forfeited and was used to pay for the hearing's administrative costs.

At the same time, Mark Adair's driller's license application was denied for failure to provide proof of legal drilling experience. Also, Mark was not listed with the Board of Water Well Contractors office in Helena as an apprentice driller.

Keep in mind that when apprentices work for your firm, their experience may not be accepted when they apply for a license if they are not listed with the Board office in Helena.

Any contractor that hires someone whose license has been revoked is subjecting his own license to disciplinary action.

For further information on any of the material contained herein contact:
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